

REMARKS

Reconsideration of the application in light of the amendment and the following remarks is respectfully requested.

Claims 1-6 are pending in the application.

Applicants appreciatively acknowledge the Examiner's indication of allowable subject matter in claim 3. Claim 3 has been amended to be in independent form and includes all the limitations of the base claim and any intervening claims. No new matter is added.

Rejection Under 35 U.S.C. § 102

Claims 1 and 4-6 stand rejected under 35 U.S.C. § 102(b) as being unpatentable over U.S. Patent No. 6,487,307 to Hennessey et al. ("Hennessey"). Applicants respectfully traverse the rejection.

The Examiner contends that Hennessey discloses a defect inspection method which comprises repetitively scanning a light beam in a linear pattern on a first work; storing reference images of said linear pattern on said first work, together with related information about positions of said light beam to produce a first matrix value at each position of said light beam; and repetitively scanning said light beam in said linear pattern on a second work; storing reference images of said linear pattern on said second work, together with related information about positions of said light beam to produce a second matrix value at each position of said light beam.

Applicants submit that Hennessey discloses a defect inspection method which illuminates the surface of a structure to be measured with light sources 112, an image capturing device 116 (an overhead camera) captures an image of the structure, the captured image is then digitized by a digitizer. The image capturing device 116 is preferably a single line-scan or area-scan camera. The digitized image (a "captured area") is then superimposed upon a grid. The digitized captured area is searched by a decomposition window 130 to locate differing light intensities and transfers the information to a structure anomaly detection/location system 10. The anomaly detection/locations system recognizes the differing light intensity as an edge of a structure. The decomposition window then traces the outline of the structure, returning to where the structure was

first detected, and then continues its search; but masking out the area within the outlined structure from further searching. (Hennessey, column 5, line 19 through column 6, line 48.)

Additionally, Applicants submit that Hennessey discloses creating a reference structure grammar for a defect-free unit, and a structure grammar for a production unit. The grammars are constructed from searching the digitized captured image. The grammars are a collection of primitives, a unit of image information, which for a line contains a start point, an end point, and the light intensities to the left and to the right of the line. The reference structure grammar and the production structure grammar are then compared primitive by primitive.

Claim 1 recites the steps of “repetitively scanning a light beam in a linear pattern on a first work” and “storing reference images of said linear pattern on said first work, together with related information about positions of said light beam to produce a first matrix value at each position of said light beam.” Claim 1 also recites repeating these steps for a second work, where the first work is a reference work and the second work is an inspected work. The present invention repetitively scans a light beam and stores reference images along with information about light beam positions. In contrast, Hennessey merely discloses illuminating a structure and capturing a photographic image that is digitally stored.

Further, claim 1 recites “finding a set of differences between each element of said first matrix and each corresponding element of said second matrix.” Claim 1 recites that each element of a matrix corresponds to each position of the light beam. In contrast, Hennessey discloses comparing primitives, where the primitives contain a start point and an end point defining a line, and the light intensities to the left and to the right of the line. Thus, Hennessey does not compare matrix elements which correspond to each position of the light beam.

Independent claims 4 and 5 recite similar features as claim 1, and Applicants submit that claims 4 and 5 are patentable over Hennessey for at least the foregoing reasons. Claim 6 depends from claim 5, and is submitted to be patentable over Hennessey for at least the same reasons as claim 5. Therefore, Applicants request withdrawal and reconsideration of the rejection.

Rejection Under 35 U.S.C. § 103

Claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Hennessey in view of U.S. Patent No. 5,680,207 to Hagiwara. Applicants respectfully traverse the rejection.

The Examiner contends that Hennessey disclose all the features of claim 2 with the exception of rotating a scanning mirror about an axis. However, the Examiner contends that Hagiwara discloses rotating a scanning mirror about an axis and states it would have been obvious for a person of ordinary skill in the art at the time of the invention to combine Hennessey with Hagiwara.

Applicants submit that claim 2 depends from claim 1 and for the reasons explained in the previous section, Hennessey does not disclose the features discussed above. Hagiwara does not disclose any matter, which when combined with Hennessey overcomes these deficiencies. Therefore, Applicants submit that the combination of Hennessey and Hagiwara does not disclose or suggest the present invention. Withdrawal and reconsideration of the rejection is requested.

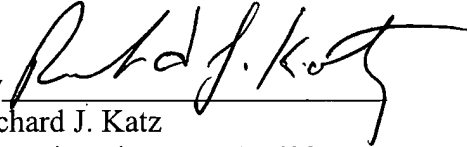
CONCLUSION

Each and every point raised in the Office Action dated September 3, 2003 has been addressed on the basis of the above amendment and remarks. In view of the foregoing it is believed that claims 1-6 are in condition for allowance and it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining which the Examiner believes could be resolved through a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

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Respectfully submitted,

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